• COLORADO RIVER •

AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

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Long and Severe Dry Period Interrupted By January Rains In Southern California

By C. C. Elder, Hydrographic Engineer

The 1942 irrigation season in Southern California was ended, belatedly, on January 21, 1943 by the first real rainstorm of the winter. At the Los Angeles Civic Center the storm's measured downpour was 5.60 inches, giving a season total to date, including subsequent showers, of 10.0 inches, which is 29 per cent above normal for the end of January. At higher points in the city the rain was two to three times heavier and most of Southern California received at least 4 inches. For the 14 members of The Metropolitan Water District of Southern California, the average for the storm was 8 inches, bringing the season's average to 12 inches, likewise considerably above normal to date. Pasadena received 12.7 inches.

The storm came opportunely, just as the prolonged 1942 drought was up for reclassification from "serious" to "acute" in all localities lacking an imported aqueduct water supply. To worried irrigators and gardeners rain rationing had actually seemed to be in effect, with no black cloud market in sight, and all precipitation priorities cancelled. As frequently heard as "When will the war end?" was the question "When will it rain?"—and it was equally unanswerable. While vig-

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Board Unanimously Reelects Its Officers

At a meeting of the Board of Directors on January 29, Chairman W. P. Whitsett, Vice Chairman Franklin Thomas and Secretary T. P. Hapgood were unanimously reelected to serve in their respective Board offices for another two-year term.

Chairman Whitsett is one of the seven representatives on the District's governing board from Los Angeles. Vice Chairman Thomas is the representative of Pasadena. They were first elected to the offices they now hold at the time the Board established its permanent organization in 1929. Since then they have been reelected eight times.

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Officers of the District Board of Directors who this January were unanimously reelected to another two-year term. (Left to right) Chairman W. P. Whitsett, Vice Chairman Franklin Thomas and Secretary E. P. Hapgood.

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THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
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Work In Progress On South Coast Line

First phase of the job of extending the District's Orange County distribution line to serve the Coastal Municipal Water District was well under way in January. This work consists of the removal from its present location of approximately 11 miles of 36-inch steel pipe which formerly delivered water from Morris reservoir to Pasadena.

After the Morris reservoir pipe line has been removed from its original location, the pipe sections will be transported to the American Pipe and Construction Company plant. There the old asphalt coating will be removed, pipe sections will be reconditioned and the ends will be squared and shaped for field joints. Next the pipe will be sand blasted and coated inside and out with coal-tar enamel. Finally, there will be applied to the exterior of the pipe a mortar coating three-fourths of an inch thick.

In addition to the reconditioned Morris reservoir pipe line, the distribution line extension will consist of 1.7 miles of precast concrete pipe. At Corona del Mar the Water District line will connect with an existing pipe line now serving Laguna Beach and the South Laguna Beach area. The District line will pass through the Costa Mesa district, and connections to serve this territory will be made at convenient points.

There is included in the new aqueduct distribution line extension a 5,000,000 gallon capacity reservoir, which is to be constructed on the line about a mile and a half north of Corona del Mar. The primary purpose of the reservoir is to regulate water flow. It will also have sufficient capacity to serve for a number of years as reserve storage for the Coastal Municipal Water District area.

The new line is scheduled to be completed and ready to begin the delivery of water by October.

Drought Interrupted

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ilantly spotting each passing plane, Southern Californians were also keeping a weather eye on the lookout for rain clouds.

The lean drought year of 1942 had been the more noticeable, though less damaging than the dry season just preceding the January storm, because it followed a remarkable series of five above normal rainfall years. In their cumulative excess of rainfall above the normal, these wet years were almost unprecedented in 175 preceding years of successive flood and drought periods. Then came 1942, the driest in 20 years.

The actual severity of the dry period, interrupted by the January rains, is emphasized by the fact that at Los Angeles only 4 years during the 65 years of record have been as dry as 1942, and probably but 13 in the entire 175 years of Spanish-Mexican-American occupancy. During the earlier pre-record times, however, there have been reported periods of a year or more without measurable rainfall, indicating relatively far greater severity of droughts as well as much longer duration than any experienced of recent years.

Not only was Southern California affected by the 1942 lack of rainfall but also considerable portions of six southwestern states covering a region of one-half million square miles. This drought has been especially severe in Arizona and extended into Western New Mexico and, in lesser degree, into Western Colorado and Southern Utah. It also was felt northward across Owens Valley and throughout most of Nevada, as well as south into Lower California and Sonora, in Mexico. The damage as yet has chiefly been to range and pasture lands, though depleted reservoirs (previously replenished during the series of wet years) had again begun to be a matter of concern in irrigated areas. As yet, present storms are not

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Underground Water Levels 1880-1943

Here is the record of Southern California's falling underground water levels for the past 63 years:

Date		Average depth to water surface in wells
1880	Most wells strongly artesian	+50 ft. (approx.)
1900	Average of artesian and pumped wells	0 ft. (est.)
1920	U. S. Census record	–62 ft.
1930	U. S. Census record	–80 ft.
1940	U. S. Census record	–89 ft.
1943	Estimated not higher than	–95 ft. (approx.)

- DIRECTORY -

BOARD OF DIRECTORS

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Franklin Thomas, Vice-Chairman

E. P. Hapgood, Secretary

Anaheim.....E. P. Hapgood
Beverly Hills.....Arthur Taylor
Burbank.....James L. Norwood
Compton.....Warren W. Butler
Fullerton.....Walter Humphreys
Glendale.....Herman Nelson
Long Beach.....William M. Cook
Los Angeles.....Otto J. Emme
Los Angeles.....Perry H. Greer
Los Angeles.....Joseph Jensen
Los Angeles.....D. W. Pontius
Los Angeles.....John R. Richards
Los Angeles.....Victor H. Rossetti
Los Angeles.....W. P. Whitsett
Pasadena.....Franklin Thomas
San Marino.....John H. Ramboz
Santa Ana.....A. H. Allen
Santa Monica.....Samuel G. McClure
Torrance.....Charles T. Rippy
Coastal Municipal Water District.....C. C. Cravath

Executive Secretary.....A. L. Gram

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General Counsel.....James H. Howard
Controller.....J. M. Luney
Treasurer.....Ira R. Pontius

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Chief Electrical Engineer.....J. M. Gaylord
Chief Operation and Maintenance Engineer.....R. B. Diemer
Assistant to the General Manager.....Don J. Kinsey
Right of Way and Claims Agent.....Geo. R. LeBaron
Office Engineer.....R. A. Skinner
Senior Mechanical Engineer, R. M. Peabody
Chief Accountant.....A. W. McKinlay
Assistant Controller.....Miriam Taylor
Assistant Treasurer.....Hortense Miller
Hydrographic Engineer.....C. C. Elder
Purchasing Agent.....E. W Putnam

DIVISION ENGINEERS

Field Supt., Pumping Plants....T. T. Walsh

• MONTHLY REPORT •

(EDITOR'S NOTE: The following is a brief summary of some of the activities of the District as set forth in the monthly report of General Manager Julian Hinds, filed with the Board of Directors in January, 1943, covering work done in December, 1942.)

Construction

Parker Power Plant—On December 13, 1942 the U. S. Bureau of Reclamation placed Units 1 and 3 of the Parker power plant in regular service, operating in parallel with the District system in accord with the interchange provision of the District's Boulder power contract. Assembly of Units 2 and 4 continued.

Ground Wires on 230 kv Transmission Line—Shipments of structural steel brackets and line hardware were received at Goffs and are being distributed in readiness for installation.

Coastal Municipal Water District Line—A laying diagram is being made to insure orderly and economical removal, reconditioning, and relaying of the pipe line purchased from Pasadena, and preparations were made for an early beginning of work by American Pipe and Construction Company. On December 11, 1942 the Board awarded a contract for supplying the coal-tar coating for the steel pipe to Barrett Division of Allied Chemical and Dye Corporation.

Operation and Maintenance

General—Release of water from Copper Basin reservoir was limited to 50 acre feet for use of the U. S. Army. The application of the District for gasoline rations was approved by the O.P.A. and coupons were obtained to permit essential travel by District vehicles and to provide for non-highway needs.

Design—Tabulations were compiled to facilitate identification of pipe sections, equipment, and miscellaneous metalwork removed from the Pasadena pipe line. Analyses were made of the contractor's construction plans for the Coastal Municipal Water District line and right of way descriptions were prepared for the line.

Parker Dam—The water surface elevation in Lake Havasu was lowered 4 feet from 446.2 on November 30, 1942 to 442.2 feet on December 31, 1942. The average discharge of the Colorado River at Parker Dam was 19,760 cubic feet per second.

Pumping Plants—There was no system pumping in December. Synchronizing equipment was installed at Gene plant and relays were adjusted to facilitate parallel operation of Parker power plant and the District system.

Distribution System—At Lake Mathews routine maintenance of the reservoir area, water sampling, keeping of necessary records, and patrolling of the aqueduct easterly and of the upper feeder westerly were continued. The water level on December 31, 1942 was at elevation 1,342.59 feet, representing a useful storage of 76,724 acre feet, a decrease of 761 acre feet during the month. During the month, the average flow through the Softening Plant was at the rate of 15 cubic feet per second or 9,800,000 gallons per day. The hardness of the influent water, averaging 389 p.p.m. was reduced to 101 p.p.m. Delivery of softened water to Compton was increased to an average of 2.5 cubic feet per second in the second period of the month and was continued to Beverly Hills, Fullerton, Long Beach, Los Angeles at Palos Verdes, and Santa Monica.

Hydrographic—Meetings of the Colorado River Board of California were attended. Water surface elevation at Lake Mead on December 31 was 1,188.5 feet, a drop of 5.54 feet during the month, and is now 32.9 feet below the spillway elevation of 1,221.4 feet. The average discharge at Boulder Dam in December was 18,690 c.f.s.

Employment—In December, 18 classified positions were filled, 12 by transfers and 6 by new employments. There were recorded 12 terminations, 1 extended military leave, 23 changes of status, 8 employment contracts and 114 interviews.

Right of Way—Work is in progress on the acquisition of right of way for the Orange County feeder extension. Crop sales from the citrus and walnut groves at La Verne amounted to $27,093.71 in 1942, compared with $19,086.74 in 1941, an increase of 42 per cent.

Purchasing—During December, 163 purchase orders and 3 agreements were issued in an aggregate amount of $21,800.00. Freight forwardings consisted of 2 cars of chemicals and 4 cars of salt to the softening plant and one car of steel for the ground wire installation on the 230 kv. transmission line. Cash salvage sales for the month amounted to $5,460.65. The appraised value of salvage stock on hand at the end of the month was $353,455.36.

Officers Reelected

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Director Hapgood, who has been the representative on the Board from Anaheim since 1935, was elected Secretary of the Board in 1941 to succeed Colonel S. H. Finley who had resigned after having served as the Board's Secretary ever since the establishment of the District. Up to the time of his resignation from the Board in 1942, Colonel Finley was the representative of Santa Ana.

The District's board officers and directors serve without compensation. In addition to the time which they devote to board meetings and commitee hearings, the Chairman, Vice Chairman and Secretary give generously of their time in the consideration and direction of District affairs.

Drought Interrupted

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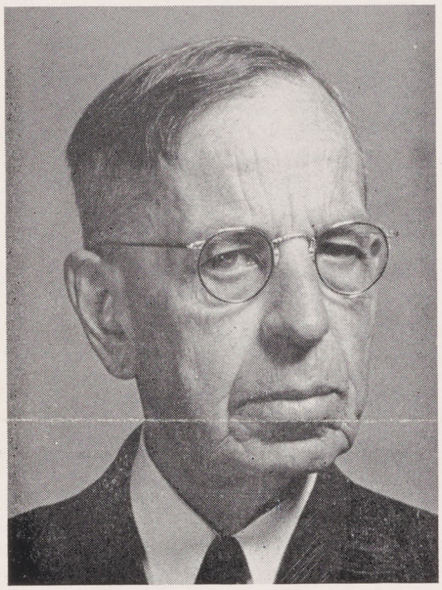
reported as having been general enough to relieve this situation materially, outside of the Southern California area adjacent to Los Angeles.

In this coastal plain area of 2,200 square miles, dependence has long been placed chiefly on wells pumped from underground water storage basins and sub-basins, nearly 50 in number. Water supply conditions in these vary greatly according to (1) location with respect to replenishment from mountain watersheds, water spreading facilities, imported supplies, urban development with its reduction of percolation areas; (2) storage capacity relative to rate of pumping; and (3) overdraft rates, past and present, their duration and records of basin exports and imports.

The long-sustained overall depletion of local ground water supplies is indicated by U. S. Census averages of depth to water surface in all wells in the 4-county Southern California Coastal Plain. The apparent trend is of course affected by the more nearly static levels in the favorably located and less depleted basins.

With imported water now available for all areas of the Coastal Plain that are in need of immediate help, it is probable that during the next long, severe drought (whenever, soon or later, this may occur) the use of such supplementary water will be sufficiently large and general to stop this persistent average downward trend, perhaps before it reaches the 100-foot mark toward which it still seems to be plunging.

NEWS FROM FIELD AND OFFICE



William Holt Glenn

William Holt Glenn, who was Solicitor and Claims Adjustor in the Right of Way and Claims Division from October 1932 to January 1943, is now with Loren Hillman, Inc., and is engaged particularly in the handling of oil leases. In his new work Mr. Glenn is once more associated with Howard C. Yates, who from 1931 to 1941 was Title Examiner and Attorney in the Right of Way office.

Walter P. Smith, after serving in the District organization almost seven years as Mechanic, Machinist Foreman and Maintenance Mechanic, has entered the U. S. Army, and his name now appears on the lengthening list of District employees that have been granted military leaves of absence.

Early in January, Oliver J. Thompson was granted military leave to enter the armed forces of the U. S. He had been with the District since 1937 and since June of 1940 had been a Pumping Plant Operator stationed at Intake and Gene plants.

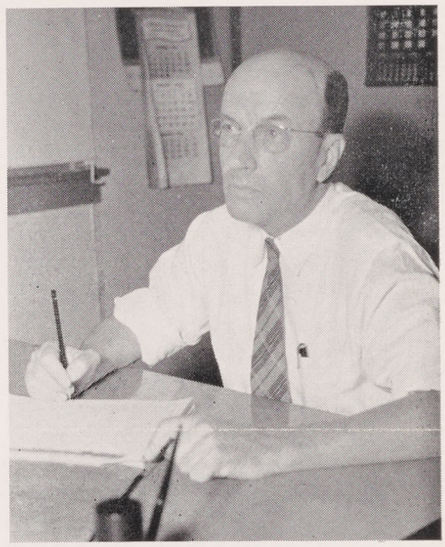
How District employees are rendering war service for their country is to be set forth in a special display soon to be placed in the Third Street window at the Los Angeles headquarters. A feature of the exhibit will be a revolving globe showing the fighting fronts on which Aqueducters are in service.

Word comes from Fred C. Ingram, who resigned from his work as Engineer in Distribution in 1939 to enter the services of the U. S. Army Engineers. He recently completed flood control and power studies in Norfolk, Virginia, and is now located in Winchester, Virginia, where he is engaged in the preparation of a power report on the Potomac River.

John P. Densmore, who was an Instrumentman, Inspector, and Assistant Engineer in the aqueduct field organization during the construction period from 1932 to 1938, is now a Lieutenant in the U. S. Navy Reserve. He is attached to Naval Construction Battalion 77 and is presently stationed at Camp Peary, Williamsburg, Virginia.

District employees are getting an early start in their plans to participate actively in the Red Cross Roll Call, which this year will be set under way in March. With America's fighting men on a dozen battle fronts around the world, the Red Cross call for contributions comes this year with special and personal significance to every civilian.

Private Jack Bickford, who is believed to be in the general vicinity of Alaska. The photo was taken at Camp Robinson, Arkansas. Before going on military leave in September of last year, Jack was a Division Patrolman stationed at the Iron Mountain Pumping Plant.



Out in his desert field headquarters at Gene Pumping Plant, Tom Walsh, Superintendent of the aqueduct Pumping Plant System, finds it more comfortable to work in his shirt sleeves, winter and summer alike. It is Superintendent Walsh's job to see that Colorado River water gets the right kind of start on its long journey to the District cities.

Hydrographic Engineer C. C. Elder late in January received a letter from Gleb Spassky, who resigned his position as Assistant Engineer in the Hydrographic Division on last December 28 to engage in engineering work on the Pan American Highway. The following is an excerpt from Spassky's letter sent from San Jose, Costa Rica:

"I like San Jose and country surrounding it—everything seems so green and fresh as a result of 100 inches of rainfall a year. I have already spent two weeks in the field with another fellow, learning how to estimate the sizes of culverts for road drainage. We flew from here to David, Panama, and worked our way from there by truck and jeep to the end of existing roads. The only way we could proceed from there was by foot—so we started hiking along the survey line of the road locating culverts and bridges as we went. The country we worked is quite rugged and beautiful with many mountain streams and waterfalls. We made 120 kilometers in six days, most of the time climbing over fallen logs and clinging to steep hillside. Stayed in native huts and surveyor's fly camps and ate mostly rice and beans and army emergency rations. On our return to El Volcan, I must admit that I was foot-sore."